

Claims:

1. A route information transmitting method being characterized in that:

a transmitting side provides a receiving side which
5 requests route information with compressed data obtained by
arithmetically processing position data of a plurality of
points aligned along a route so as to convert the position data
into statistically biased data and variable length coding the
statistically biased data so converted, and in that;

10 the receiving side identifies the route by decoding the
compressed data so as to restore the position data.

2. A route information transmitting method according to
Claim 1, characterized in that:

15 the receiving side indicates the transmitting side a
current point and a destination so as to request route
information to the destination; and in that

the transmitting side calculates a route to the
destination and provides the receiving side with the compressed
20 data regarding the route.

3. A route information transmitting method according to
Claim 1, characterized in that:

the receiving side requests information on traveling path
25 by designating a range; and in that

the transmitting side extracts a traveling path which

falls within the range from past traveling path information stored therein and provides the receiving side with the compressed data regarding the traveling path.

5 4. A route information transmitting method according to Claim 1, characterized in that:

the transmitting side obtains the compressed data by performing an equidistance re-sampling on the route, representing position data of an obtained sampling point by a deviation angle and variable length coding the deviation angle.
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5. A route information transmitting method according to Claim 1, characterized in that:

the transmitting side obtains the compressed data by performing an equidistance re-sampling on the route, representing position data of an obtained sampling point by a deviation-angle estimated difference value and variable length coding the deviation-angle estimated difference value.
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20 6. A route information transmitting method according to any of Claims 1 to 5, characterized in that:

the receiving side performs a matching with digital map data held in a device thereof using the restored position data so as to identify an object road on the digital map data held in the device thereof.
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7. A route information providing apparatus being characterized by comprising:

receiving means for receiving a request for information on a route;

5 encoding means for producing compressed data by performing an arithmetic treatment on position data of a plurality of points aligned along the route so as to convert the position data into statistically biased data and variable length coding the data; and

10 transmitting means for providing the compressed data.

8. A route information providing apparatus according to Claim 7, characterized by comprising further:

15 route calculating means for calculating a route to a destination based on information on a current point and the destination which is received by the receiving means; and characterized in that;

the encoding means produces the compressed data regarding the route calculated by the route calculating means.

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9. A route information providing apparatus according to Claim 7, characterized by comprising further:

storing means for receiving and storing information on traveling path; and

25 running route information extracting means for extracting a traveling path which falls within a designated

range received by the receiving means from traveling path stored in the storing means; and characterized in that;

the encoding means produces the compressed data regarding the traveling path extracted by the running route extracting means.

10. A route information receiving apparatus being characterized by comprising:

transmitting means for requesting information on a route;
10 receiving means for receiving compressed data provided;
and

compressed data decoding means for restoring position data of a plurality of points aligned along the route by decoding the compressed data.

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11. A route information receiving apparatus according to Claim 10, characterized in that:

information on a current point and a destination is transmitted from the transmitting means, a matching with a digital map is performed using the position data restored from the compressed data provided, and the route is identified on the digital map, so that a route from the current point to the destination is identified.

25 12. A route information receiving apparatus according to Claim 10, characterized in that:

information designating a range is transmitted from the transmitting means, a matching with a digital map is performed using the position data restored from the compressed data provided, and the route is identified on the digital map, so
5 that a traveling path falling within the range is identified.

13. A route information receiving apparatus according to Claim 10, characterized by comprising further:

map matching means for performing a matching with a
10 digital map using the position data restored by the compressed data decoding means so as to identify the route on the digital map.

14. A route information receiving apparatus according to
15 Claim 13, characterized in that:

the transmitting means transmits information on a current point and a destination; and in that

the map matching means further identifies a route from the current point to the destination.

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15. A route information receiving apparatus according to Claim 13, characterized in that:

the transmitting means transmits information designating a range; and in that

25 the map matching means further identifies a traveling path falling within the range.